

WS-1000

Ethernet Analog I/O

User Manual

Version 1.0

Infosystem Technology Corporation, Ltd.

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Warranty

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Trademark

The names used for identification only maybe registered trademark of their respective companies.

Product Information

A. Introduction

WS is Web-Server product and it can provide an ideal solution to customized embedded system. By using WS Products into your systems, you can easily achieve any Serial to Ethernet Converting affairs.

WS-1000 family uses ARM7 Processor for implementing RS232 to Ethernet functions. It uses the state machine to handle TCP/IP stack and brings the user a lower cost TCP/IP stack with limited functions because of the limited resources.

WS-1000 family is a small size and low cost solution. It is easy to convert serial port data to Ethernet in IA Solution, FA(Factory Automation), BA(Building Automation), Security or any other low data rate data transmission by using it as the intermediate converter. It supports ARP, ICMP, TCP, UDP, IP, DHCP-Client and even HTTP protocols. You can use any browsers to set the parameters, or just use the commands in console mode. With no doubt, WS-1000 will bring you the easiest management in your applications.

B. Features

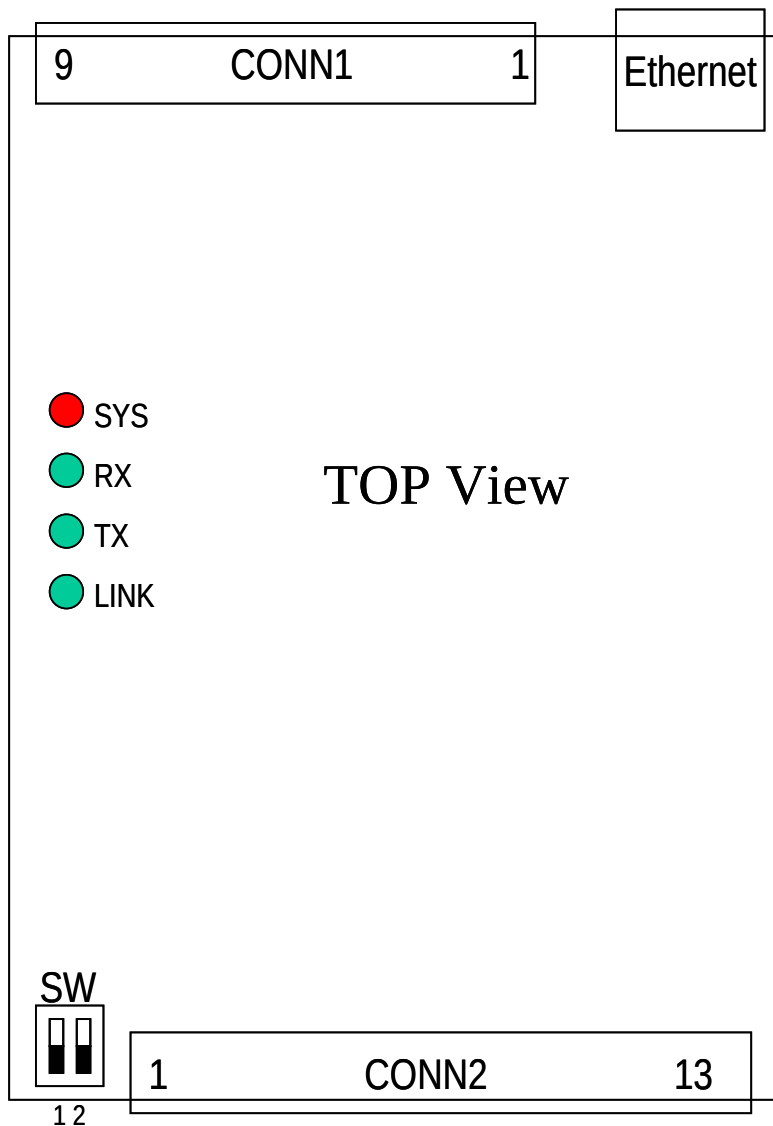
- Easy Configuration Setting
 - ✓ *Software Setup Tool for Configuration Setting*
 - ✓ *Use HTTP, IE/Netscape Browser for Setting*
- Good Security Concerned
 - ✓ *Setup Login in Password Protect*
 - ✓ *Access Password Protect*
 - ✓ *Support New Version Firmware Upgradeable*
- Low cost and High Reliability
 - ✓ *Cheap and stable*
 - ✓ *Working 24Hours per day*
- Low Power Consumption
 - ✓ *Less than 1W Power Consumption*
- Support Necessary Network Protocols
 - ✓ *ARP, ICMP, TCP, UDP, IP, DHCP Client, HTTP*
- Support Various Interfaces (Universal Set)
 - ✓ *RJ-45 x1*
 - ✧ *10/100BaseT*
 - ✓ *RS-232(only) x2*
 - ✧ *Up to 115.2Kbps, RTS/CTS H/W flow control*
 - ✓ *RS-232/RS-485/RS-422 x2 (Software Configurable)*
 - ✧ *Half Duplex for RS485*
 - ✧ *Full Duplex for RS-422*
 - ✧ *DI x 2, DO x 2*
- Three Independent Sockets
 - ✓ *Support at most three independent sockets for each serial port and Digital I/O port*
 - ✓ *All protocol working independent and concurrently*

C. Applications

- Data collection
- Security Terminals
- Access Control Terminals
- Security Devices
- Time Recorders
- Warehouse Terminals
- Shop floor automation Terminals
- Remote Sensors and Various Meters
- Power monitors
- Power meters
- Environmental monitors
- Temperature monitors
- Data loggers
- Auto-ID Scanners
- Barcode Scanners
- Magnetic Card Readers

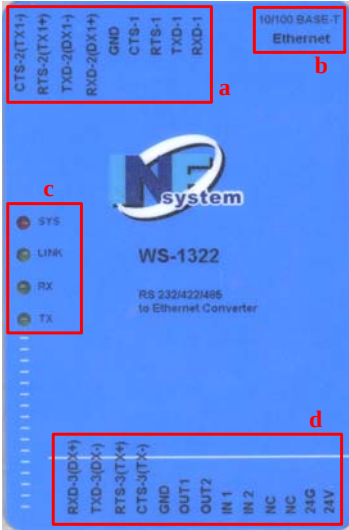
Exterior

A. Top View



Exterior

B. Front Panel



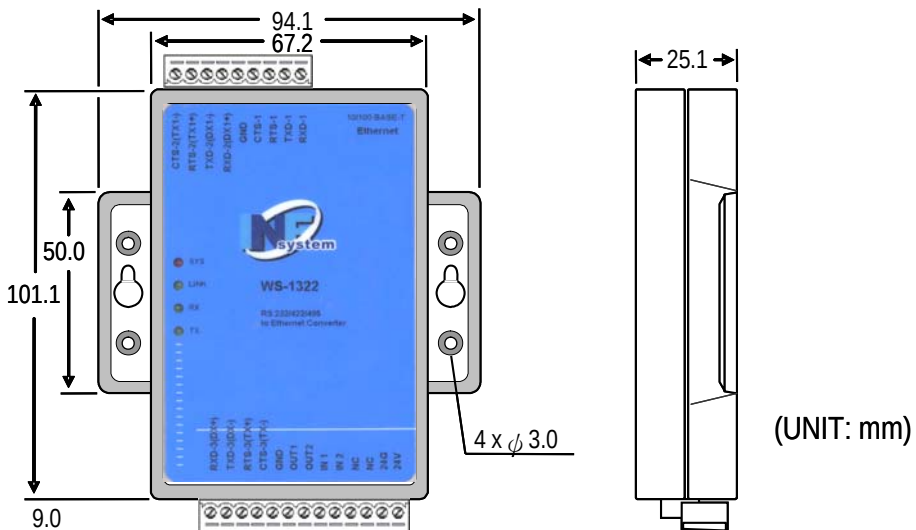
a. 9PIN Terminal Block

b. Ethernet Port

c. LED Indicator

d. 13 PIN Terminal Block

C. Dimension



Specification

A. Enhanced RS232/422/485 to Ethernet Converter

Description: Converting and Transmitting Data between Serial and Ethernet Ports

Model	WS-1100	WS-1200	WS-1300	WS-1400
CPU	ARM7	ARM7	ARM7	ARM7
Flash	256 KB	256 KB	256 KB	256 KB
RAM	256 KB	256 KB	256 KB	256 KB
Ethernet Port	1-Socket: Server/Client 3-Sockets: Server Only 10/100M Base-T	1-Socket: Server/Client 3-Sockets: Server Only 10/100M Base-T	1-Socket: Server/Client 3-Sockets: Server Only 10/100M Base-T	1-Socket: Server/Client 3-Sockets: Server Only 10/100M Base-T
Serial Port	RS-232/422/485 x 1	RS-232/422/485 x 2	RS-232/422/485 x 2 RS-232 x 1	RS-232/422/485 x 2 RS-232 x 1
Watchdog	Yes	Yes	Yes	Yes
LED	Yes	Yes	Yes	Yes
Protocol	TCP/IP, ModBus/TCP	TCP/IP, ModBus/TCP	TCP/IP, ModBus/TCP	TCP/IP, ModBus/TCP
Configuration	Web Configuration or Setup Tools	Web Configuration or Setup Tools	Web Configuration or Setup Tools	Web Configuration or Setup Tools
Temperature	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C
Humidity	20 ~ 95 %RH, Non-condensing	20 ~ 95 %RH, Non-condensing	20 ~ 95 %RH, Non-condensing	20 ~ 95 %RH, Non-condensing
Insulation	Non-Isolation	Non-Isolation	Non-Isolation	Non-Isolation
Installation	Wall Mount DIN Rail	Wall Mount DIN Rail	Wall Mount DIN Rail	Wall Mount DIN Rail
Dimension	W94 × H25 × D120 (unit: mm)	W94 × H25 × D120 (unit: mm)	W94 × H25 × D120 (unit: mm)	W94 × H25 × D120 (unit: mm)

Specification

B. Valuable RS232/422/485 to Ethernet Converter with I/O

Description: Converting and Transmitting Data between Serial and Ethernet Ports with I/O

Model	WS-1122	WS-1222	WS-1322
CPU	ARM7	ARM7	ARM7
Flash	256 KB	256 KB	256 KB
RAM	256 KB	256 KB	256 KB
Ethernet Port	1-Socket: Server/Client 3-Sockets: Server Only 10/100M Base-T	1-Socket: Server/Client 3-Sockets: Server Only 10/100M Base-T	1-Socket: Server/Client 3-Sockets: Server Only 10/100M Base-T
Serial Port	RS-232/422/485 x 1	RS-232/422/485 x 2	RS-232/422/485 x 2 RS-232 x 1
I/O	Digital Input x 2 Digital Output x 2	Digital Input x 2 Digital Output x 2	Digital Input x 2 Digital Output x 2
Watchdog	Yes	Yes	Yes
LED	Yes	Yes	Yes
Protocol	TCP/IP, ModBus/TCP	TCP/IP, ModBus/TCP	TCP/IP, ModBus/TCP
Configuration	Web Configuration or Setup Tools	Web Configuration or Setup Tools	Web Configuration or Setup Tools
Temperature	0 ~ 60 ℃	0 ~ 60 ℃	0 ~ 60 ℃
Humidity	20 ~ 95 %RH, Non-condensing	20 ~ 95 %RH, Non-condensing	20 ~ 95 %RH, Non-condensing
Insulation	Non-Isolation	Non-Isolation	Non-Isolation
Installation	Wall Mount DIN Rail	Wall Mount DIN Rail	Wall Mount DIN Rail
Dimension	W94 × H25 × D120 (unit: mm)	W94 × H25 × D120 (unit: mm)	W94 × H25 × D120 (unit: mm)

Specification

C. Common Detail Specification

Items	Description
Network Protocol	ARP, ICMP, TCP, UDP, IP, DHCP Client, HTTP
Reset	Built-in reset key to restore the defaults
Watch Dog Timer	Built-in hardware auto reset function
Discrete I/O	DC 24V Input x 2 0.5A Output x 2
Serial Port	COM1: RS232 Only COM2: RS232/422/485 Software Configurable COM3: RS232/422/485 Software Configurable COM4: RS232 Only
Serial Communication	Data speed: 300-115200 bps Data bits: 7, 8 Parity: None, Even, Odd Stop bits: 1, 2 Flow control: RTS/CTS,
Led Indication	SYS x1(Red), LINKx1(Green) RXx1(Green), TXx1(Red)
Power Requirement	24VDC, power consumption<1W
Temperature	Operation: 0°C~+55° C (32°F~+131°F) Storage: -20°C~+70°C (-4°F~+158°F)

Specification

D. LED Indicator and Switch Description

LED Indicator:

LED	Description
SYS	The SYS LED blinks at a rate of 1.5Hz and indicating normal work.
RX	Received data.
TX	Transmitted data.
LINK	If ON, the Ethernet connection is activated.

Switch Description: SW2 Always On.

SW1	SW2	Operation Mode
ON	ON	Normal Mode
OFF		Update Firmware

Specification

E. PIN Definition and Wiring

1). 4 UART Converter

There are two terminal blocks at each side of the WS-1000, one is 9 Pin terminal block and another is 13 Pin terminal block. The 1st pin of the 9 Pin terminal blocks is neighbor the RJ-45 Ethernet connector and the 2nd of the 13 Pin terminal blocks is neighbor the 2PIN DIP Switch. Please see below is the Pin layout of the WS-1000.

Connector and PIN Descriptions:

✓ RJ-45

It is an 8 Pin RJ-45 Ethernet connector; it is connected to the Ethernet Hub or another Host via Ethernet CAT-5 cable. The data rate can be 10/100MHz.

✓ 9 PIN Terminal Block

This connector offer two UART port connection, the pin description is in the following table.

9PIN Terminal Block				
Name	PIN	Mark as	Description	MISC
COM1	1	RXD-1	RS-232 Data Input	In
	2	TXD-1	RS-232 Data Output	Out
	3	RTS-1	RS-232 Request to Send	Out
	4	CTS-1	RS-232 Clear to Send	In
	5	GND	RS-232 Ground for COM1 and COM2	Power
COM2	6	RXD-2/DX+	RS-232 Data Input /RS-422/RS-485/DX+	In/-
	7	TXD-2/DX-	RS-232 Data Output /RS-422/RS-485/DX-	Out/-
	8	RTS-2/TX+	RS-232 Request to Send /RS-422/TX+	Out/-
	9	CTS-2/TX-	RS-232 Clear to Send, /RS-422/Tx-	In/-

13PIN Terminal Block

Name	PIN	Mark as	Description	MISC
COM3	1	RXD-3/DX+	RS-232 Data Input /RS-422/RS-485/DX+	In/-
	2	TXD-3/DX-	RS-232 Data Output /RS-422/RS-485/DX-	Out/-
	3	RTS-3/TX+	RS-232 Request to Send /RS-422/TX+	Out/-
	4	CTS-3/Tx-	RS-232 Clear to Send, /RS-422/Tx-	In/-
	5	GND	RS-232 Ground for COM3 and COM4	Power
COM4	6	RXD-4	RS-232 Data Input	In
	7	TXD-4	RS-232 Data Output	Out
	8	RTS-4	RS-232 Request to Send	Out
	9	CTS-4	RS-232 Clear to Send	In
	10	NC	NOT USED	NC
	11	NC	NOT USED	NC
Power	12	+24GND	Gateway Power Ground In	Power
	13	+24	Gateway Power +24V In	Power

2). UART+2 Digital Output+2 Digital Input

There are two terminal blocks at each side of the WS-1000, one is 9 Pin terminal block and another is 13 Pin terminal block. The 1st pin of the 9 Pin terminal blocks is neighbor the RJ-45 Ethernet connector and the 2nd of the 13 Pin terminal blocks is neighbor the 2PIN DIP Switch. Please see below is the Pin layout of the WS-1000

Connector and PIN Descriptions:

✓ RJ-45

It is an 8 Pin RJ-45 Ethernet connector; it is connected to the Ethernet Hub or another Host via Ethernet CAT-5 cable. The data rate can be 10/100MHz.

✓ 9 PIN Terminal Block

This connector offer two UART port connection, the pin description is in the following table.

9PIN Terminal Block				
<i>Name</i>	<i>PIN</i>	<i>Mark as</i>	<i>Description</i>	<i>MISC</i>
COM1	1	RXD-1	RS-232 Data Input	In
	2	TXD-1	RS-232 Data Output	Out
	3	RTS-1	RS-232 Request to Send	Out
	4	CTS-1	RS-232 Clear to Send	In
	5	GND	RS-232 Ground for COM1 and COM2	Power
COM2	6	RXD-2/DX+	RS-232 Data Input /RS-422/RS-485/DX+	In/-
	7	TXD-2/DX-	RS-232 Data Output /RS-422/RS-485/DX-	Out/-
	8	RTS-2/TX+	RS-232 Request to Send /RS-422/TX+	Out/-
	9	CTS-2/TX-	RS-232 Clear to Send, /RS-422/Tx-	In/-

13PIN Terminal Block

Name	PIN	Mark as	Description	MISC
COM3	1	RXD-3/DX+	RS-232 Data Input /RS-422/RS-485/DX+	In/-
	2	TXD-3/DX-	RS-232 Data Output /RS-422/RS-485/DX-	Out/-
	3	RTS-3/TX+	RS-232 Request to Send /RS-422/TX+	Out/-
	4	CTS-3/Tx-	RS-232 Clear to Send, /RS-422/Tx-	In/-
	5	GND	RS-232 Ground	Power
I/O	6	DO-1	Digital Output, Driven 100mA/24V Load	Out
	7	DO-2	Digital Output, Driven 100mA/24V Load	Out
	8	DI-1	Digital Input, 24V Signal Input	In
	9	DI-2	Digital Input, 24V Signal Input	In
	10	EGND	Digital I/O Power Ground	Power
	11	E24V	Digital I/O 24V Power	Power
Power	12	+24GND	Gateway Power Ground In	Power
	13	+24	Gateway Power +24V In	Power

Specification

F. I/O Specification

The specifications and wiring diagrams of DI and DO modules are listed here. 4 Port Converter do not support the I/O feature. (Only the Model of WS-1122, WS-1222, WS-1322 offer I/O PIN)

Digital Input Specifications

Entry		Description
<i>Number of Input Points</i>		12 points
<i>Isolated Method</i>		Photo Coupler
<i>Rated Input Voltage</i>		24V DC
<i>Rated Input Current</i>		7 mA
<i>Operation Voltage Range</i>		21.6V DC ~ 26.4V DC
<i>Turn ON State</i>		12V DC / 2 mA or higher
<i>Turn OFF State</i>		4V DC / 1 mA or lower
<i>Input Impedance</i>		Approx. 3.9 K Ω
<i>Response Time</i>	<i>OFF $\rightarrow$ ON</i>	8 msec or less (24 VDC)
	<i>ON $\rightarrow$ OFF</i>	8 msec or less (24 VDC)
<i>Common Terminal Arrangement</i>		12 points / common
<i>Internal Current Consumption</i>		MAX. 100 mA (type, all points ON)

Digital Output Specifications

Entry		Description
<i>Number of Input Points</i>		6 points
<i>Isolated Method</i>		Photo Coupler
<i>Rated Load Voltage</i>		24V DC
<i>Operation Voltage Range</i>		21.6V DC ~ 26.4V DC
<i>Type</i>		NPN / Sink
<i>Max. Load Current</i>		0.5 A/pt
<i>Leakage Current at OFF Circuit</i>		0.1 mA or less
<i>Max. Voltage Drop at ON Circuit</i>		1.5V or less
<i>Response Time</i>	<i>OFF → ON</i>	8 msec or less
	<i>ON → OFF</i>	8 msec or less
<i>Common Terminal Arrangement</i>		6 points / common
<i>External Power Supply</i>	<i>Voltage</i>	24V DC (21.6V DC ~ 26.4V DC)
	<i>Current</i>	100 mA
<i>International Current Consumption</i>		100 mA (type, all points on)

Specifications

G. ModBus Holding Register Definition

The discrete I/O points of the WS-1000 can easily be controlled and monitored through Modbus protocol. The Modbus address mapping with discrete I/O is described as the followings.

– Output Address –

The 2-points digital output of WS-1000 is mapped with the Modbus holding register “40001”. The following table describes the exact bit-mapping for Modbus holding register “40001”.

Digital Output Of WS-1000	WS-1000 Scan Data Address (ModBus Holding Register Address 40001)
DO-1	Bit 0 (40001:0)
DO-2	Bit 1 (40001:1)

– Input Address –

The 2-points digital input of WS-1000 is mapped with the Modbus holding register “40002”. The following table describes the exact bit-mapping for Modbus holding register “40002”.

Digital Input Of WS-1000	WS-1000 Scan Data Address (ModBus Holding Register Address 40002)
DI-1	Bit 0 (40002:0)
DI-2	Bit 1 (40002:1)

Software Installation

A. Installation

Step 1: Insert the CD and click the button

The Software Installation CD that came with EIO-A-200 will automatically be run after inserting it into the CD-ROM drive. Click the “Ethernet converter Setup Utilities” button will bring the installation page out,

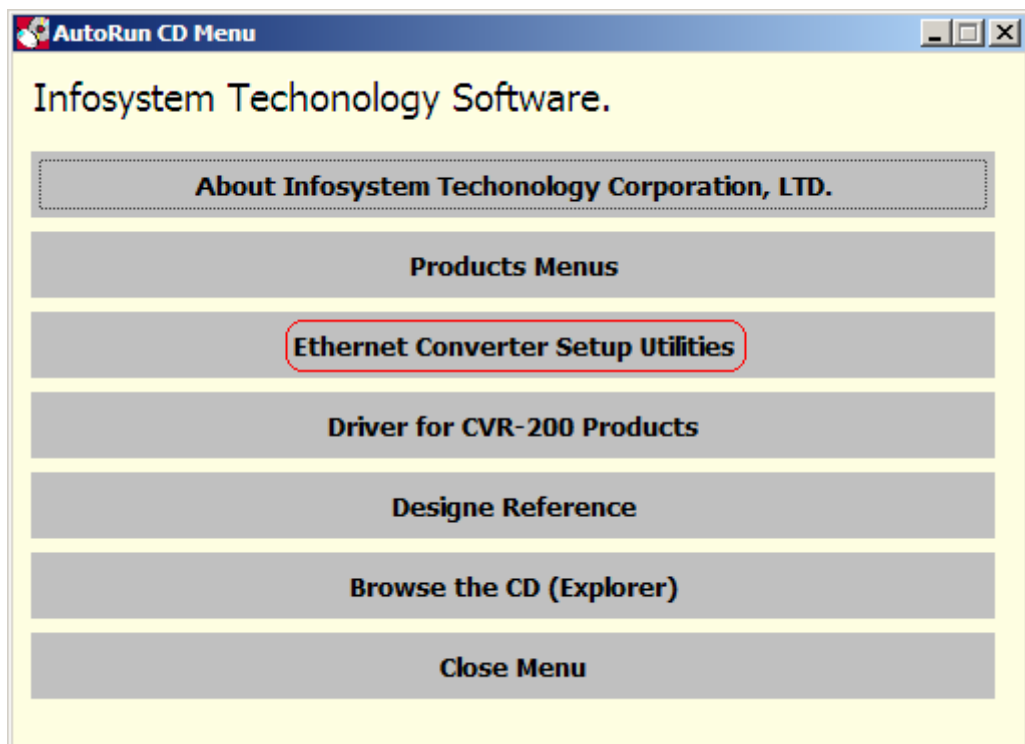


Figure1. Software Install CD Auto-Run Screen Shot

Software Installation

A. Installation

Step 2: Click the Link of the Page

Click the Link of the Page to run the Ethernet Converter Setup Tools Installation Software.

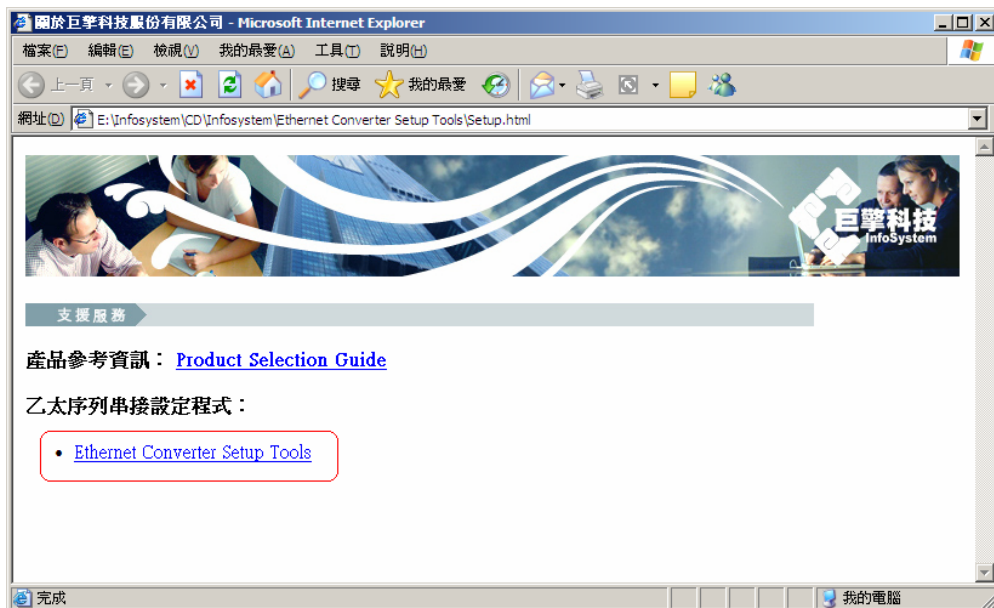


Figure2. Ethernet Converter Setup Tools Page

Software Installation

A. Installation

Step 3: Press Next to Continue

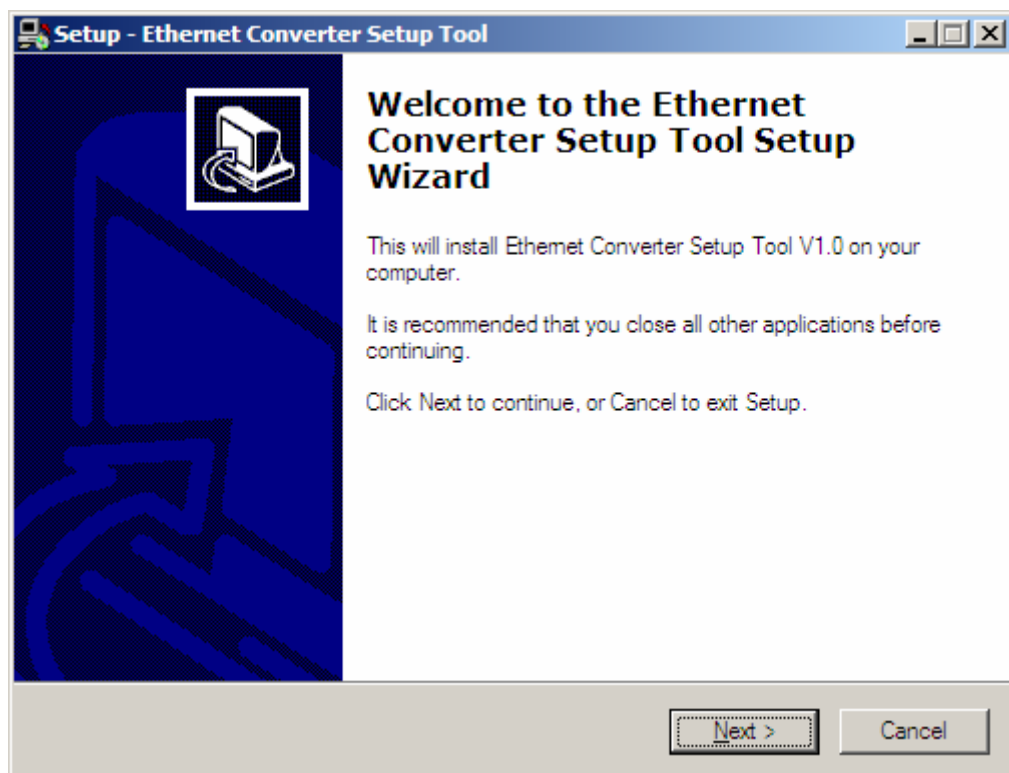


Figure3. Installation Welcome Message

Software Installation

A. Installation

Step 4: Decide the Application Directory

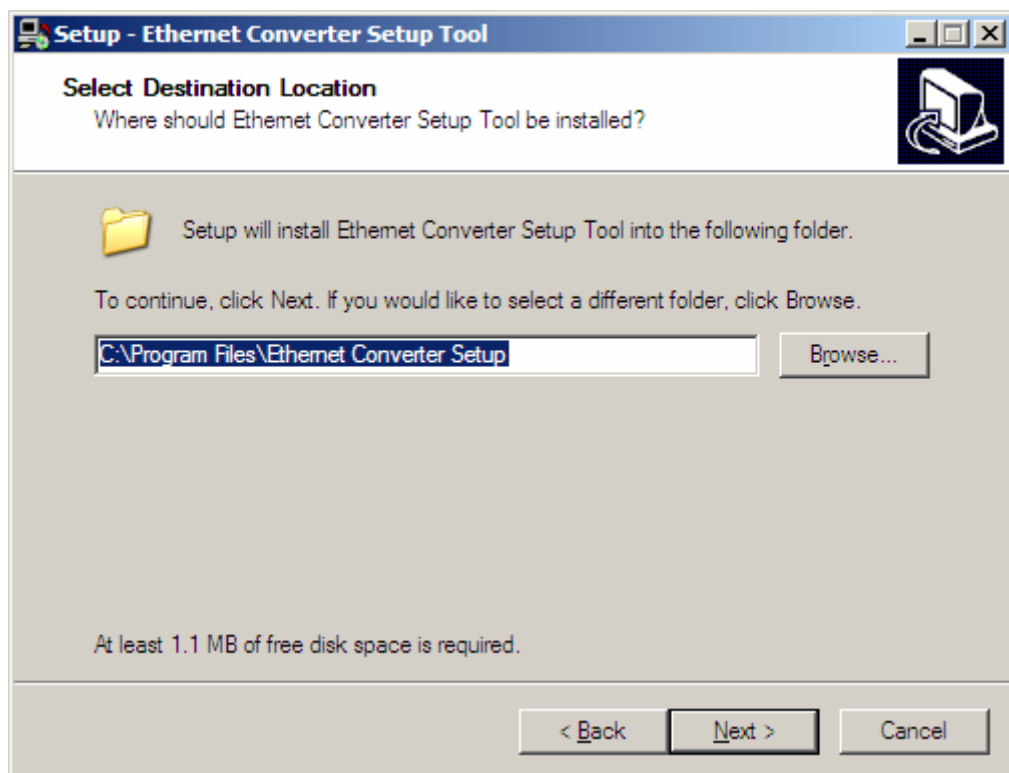


Figure4. Decide the Application Directory

Software Installation

A. Installation

Step 5: Create the Directory if not existent

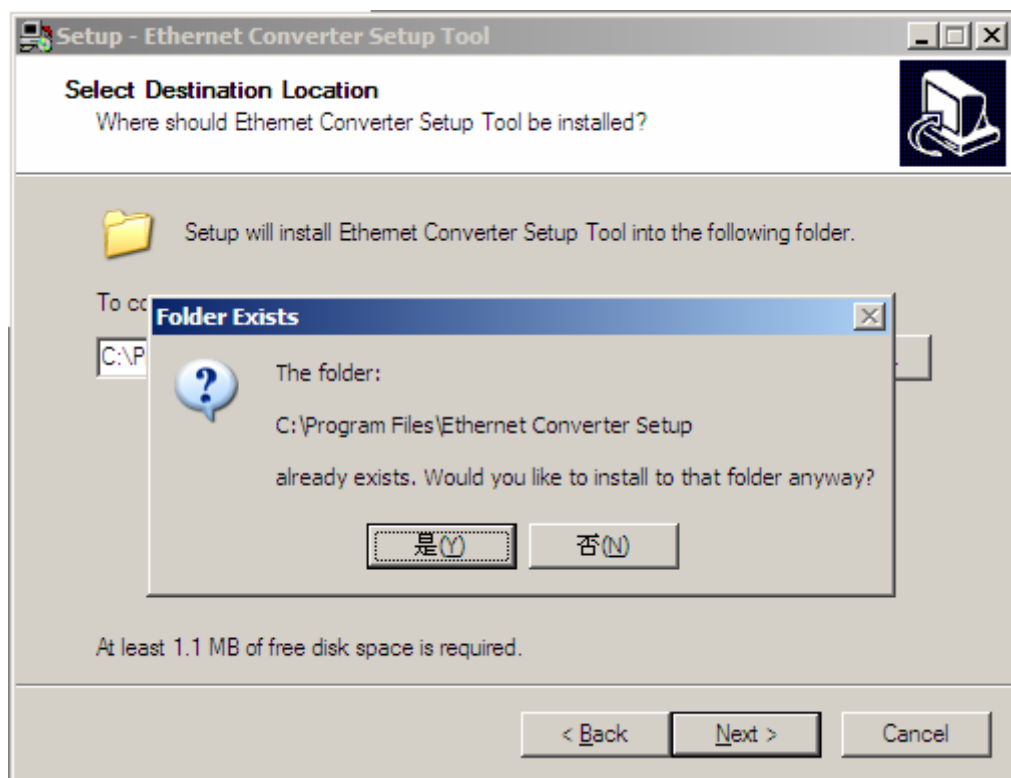


Figure5. Create Application Directory

Software Installation

A. Installation

Step 6: Create Program's Shortcut

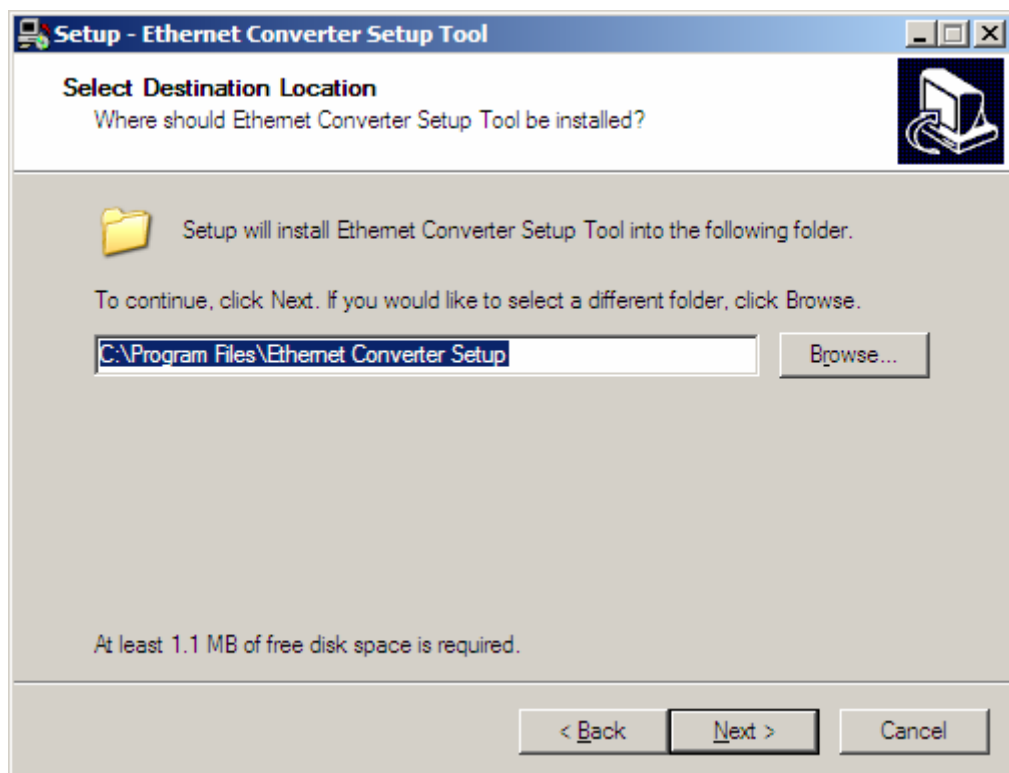


Figure6. Shortcut Creation

Software Installation

A. Installation

Step 7: Decide if Desktop icon needed

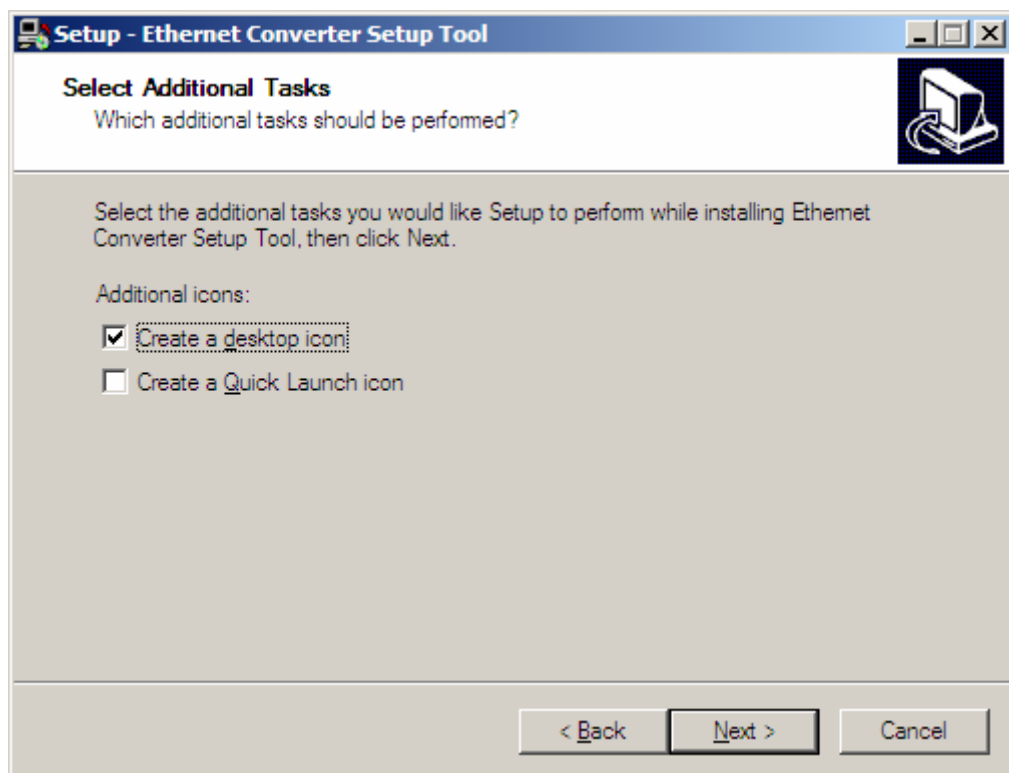


Figure7. Desktop Icon Creation

Software Installation

A. Installation

Step 8: Press Install to start installation

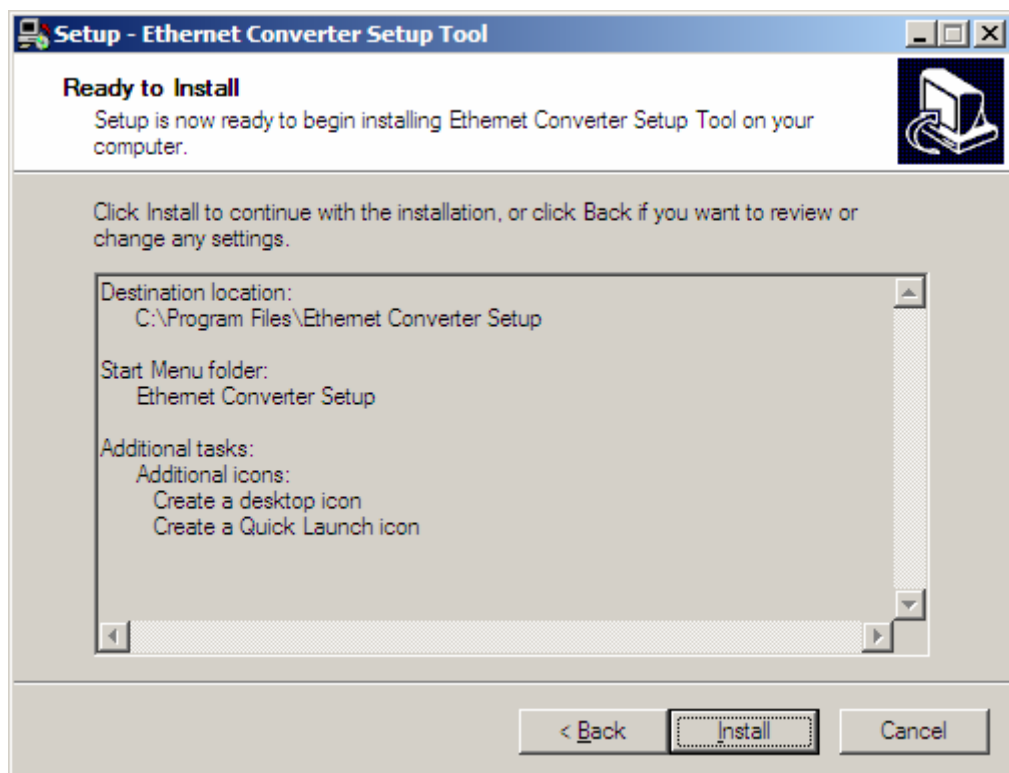


Figure8. Review the Installation Settings

Software Installation

A. Installation

Step 9: Process Installations

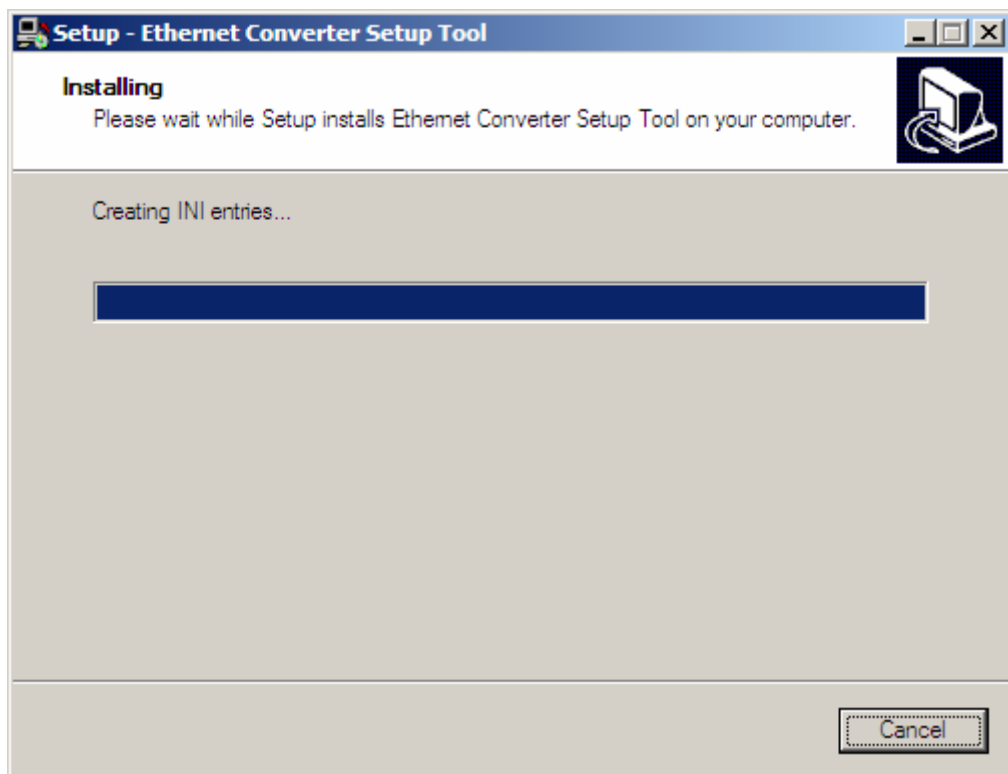


Figure9. Installing

Software Installation

A. Installation

Step 10: Finish Installation

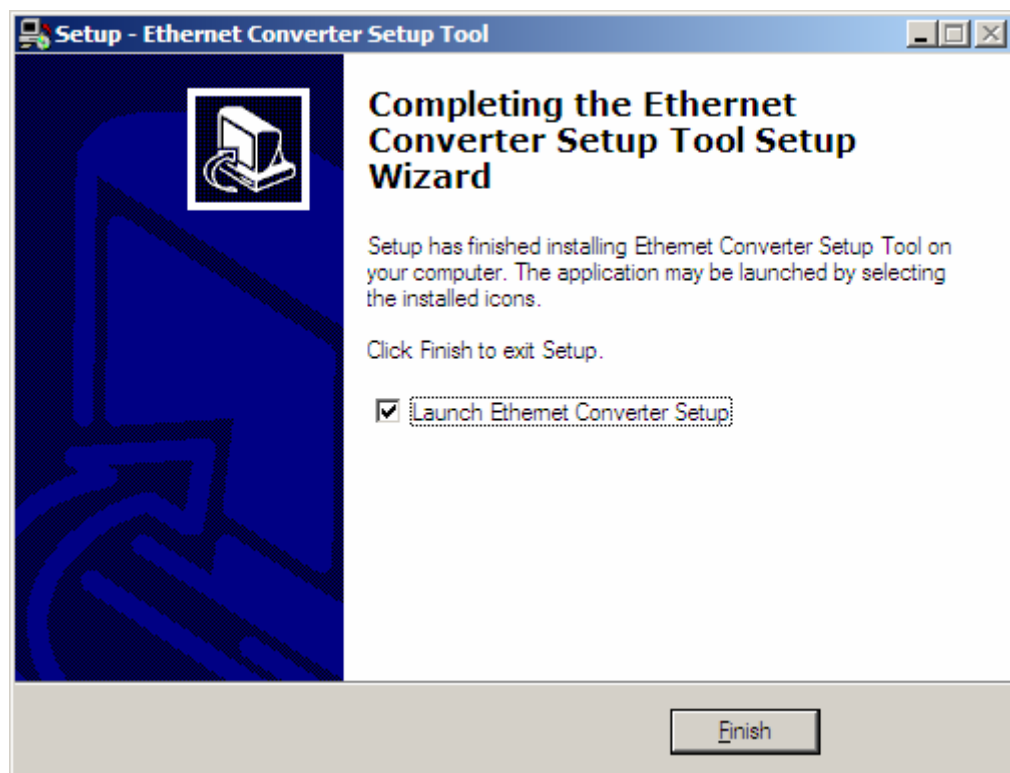


Figure10. Installation Finished

Software Installation

B. Uninstall

Step 1: Execute Uninstall Program

Uninstall Program is located at the application directory named “Uninstall Ethernet Converter Setup”. Execution of it could let the Ethernet Converter Setup Tools clearly be removed.

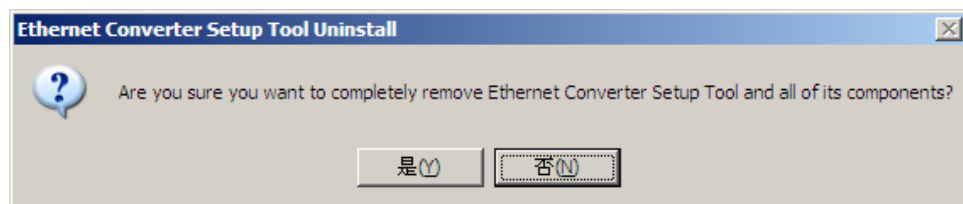


Figure11. Decide the Application Directory

Software Installation

B. Uninstall

Step 2: Click “Yes” to process

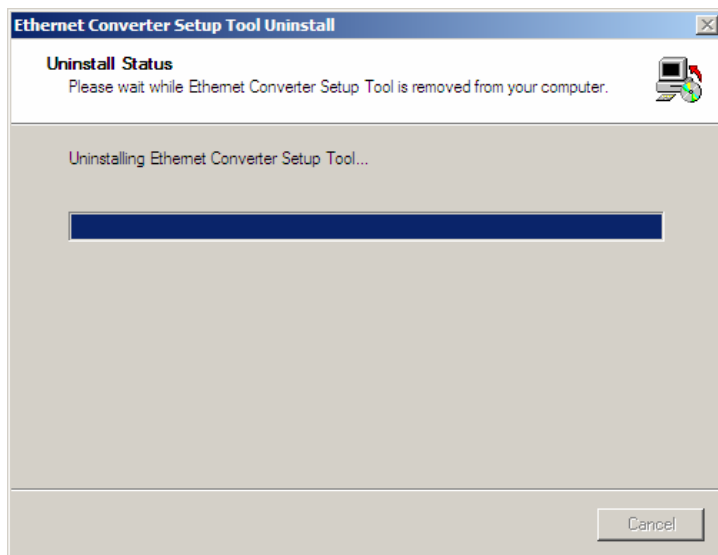


Figure12. Process Uninstall

Step 3: Finished

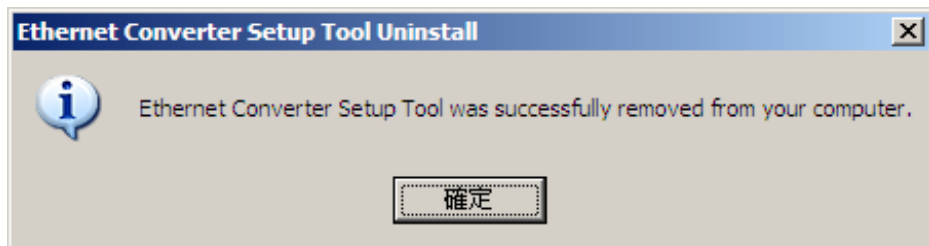
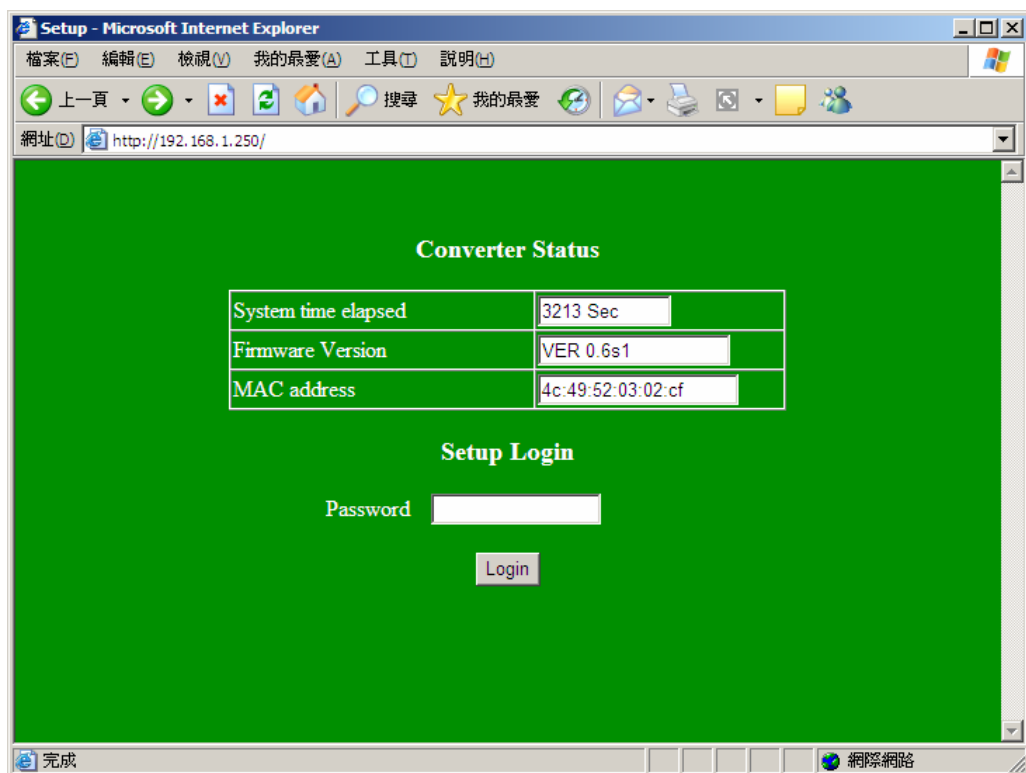


Figure12. Process Uninstall

Configuration

A.By Browser

Step 1: Ready to login.



Configuration

A. By Browser

Step 2: Configure your parameters.

Setup - Microsoft Internet Explorer

檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址(D) http://192.168.192.251/Setup.htm

Google 192.168.192.251 搜尋 113 已開啟 檢查 選項 Dr.eye 繁轉簡 簡轉繁 英英譯 英英譯簡 繁繁譯英 簡簡譯英 日語繁

Converter Setup

General Setting	Local IP	192.168.192.251
	Subnet mask	255.255.255.0
	Gateway IP	192.168.192.254
	DHCP client	Disable
	Device ID	WS-1400
	Command Port	65535
	Setup password	
	Access password	
	Multi Connections Support	Disable
	Arbitration Time	100 ms
COM1	Remote Host IP	0.0.0.0
	Remote Host port	0
	Local SIO Port, Type	1401 TCP Server
	SIO BandRate	19200 N 0 1
	SIO Type	RS232
	SIO Packets Gap	2 ms
	MODBUS/TCP	Enable
COM2	Remote Host IP	0.0.0.0
	Remote Host port	0
	Local SIO Port, Type	1402 TCP Server
	SIO BandRate	38400 N 0 2
	SIO Type	RS485 (Half Duplex)
	SIO Packets Gap	2 ms
	MODBUS/TCP	Enable
COM3	Remote Host IP	0.0.0.0
	Remote Host port	0
	Local SIO Port, Type	1403 TCP Server
	SIO BandRate	115200 N 0 1
	SIO Type	RS485 (Half Duplex)
	SIO Packets Gap	2 ms
	MODBUS/TCP	Enable
COM4	Remote Host IP	0.0.0.0
	Remote Host port	0
	Local SIO Port, Type	1404 TCP Server
	SIO BandRate	115200 N 0 1
	SIO Type	RS232
	SIO Packets Gap	2 ms
	MODBUS/TCP	Enable

Note: SIO Port 502 is Reserved for the MODBUS/TCP I/O.

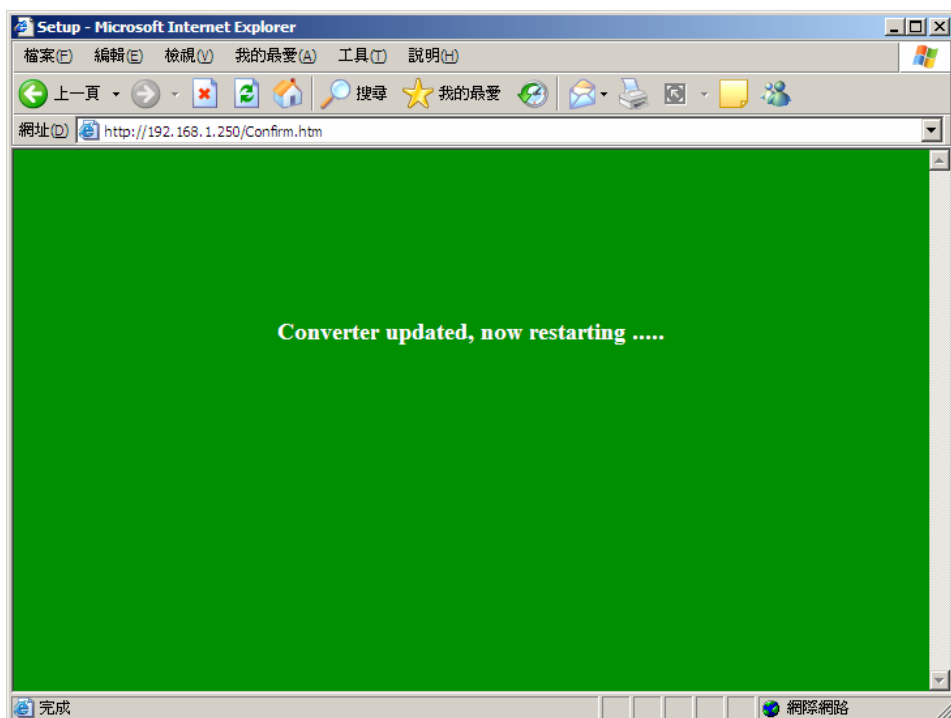
Update

完成

Configuration

A. By Browser

Step 3: Finish and reboot.

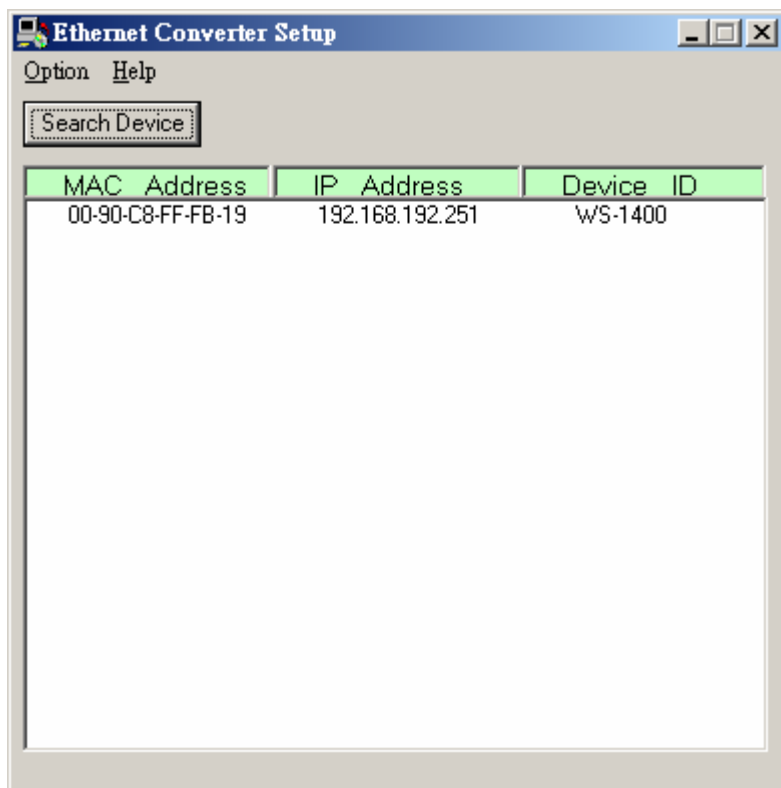


Configuration

B. By Setup Tools

Step 1: Searching the devices.

Step 2: Double click the selected item.



Configuration

B. By Setup Tools

Step 3: Configure and update your parameters.

4 Port Ethernet Converter Setup (MAC: 00-90-C8-FF-FB-19)

General Setting	Local IP	192.168.192.251			
	Subnet mask	255.255.255.0			
	Gateway IP	192.168.192.254			
	DHCP client	Disable			
	Device ID	WS-1400			
	Command Port	65535			
	Setup password				
	Access password				
	Multi Connection Support	Enable			
	Arbitration Time Period	100			
	UART Response Timeout	100			
COM1 / COM2	Remote Host IP	0.0.0.0		0.0.0.0	
	Remote Host port	0		0	
	Local TCP Port, Type	1401	TCP Server	1402	TCP Server
	SIO BaudRate	19200	E	8	1
	SIO Type	RS232		RS232	
	SIO Packets Gap	2		2	
	Modbus TCP	Enable		Enable	
	COM3 / COM4	Remote Host IP	0.0.0.0		0.0.0.0
Remote Host port		0		0	
Local TCP Port, Type		1403	TCP Server	1404	TCP Server
SIO BaudRate		38400	N	8	2
SIO Type		RS232		RS232	
SIO Packets Gap		2		2	
Modbus TCP		Enable		Enable	
Update Cancel					

Configuration

C. By Direct Broadcast Commands

It needs broadcasting to handle all the configurations and it allows users to code their own application software.

– Command List A – User Level –

Command	Description	Notes	
X or x	Purpose	For Broadcast search	
	Syntax	X <magic code>	
	Magic code	99.130.83.99	
	Return	AX <MAC>/<IP>/<Device ID>	
	Example	Send	X 99.130.83.99
		Back	AX 0.128.200.255.251.242/192.168.1.1/1
G or g	Purpose	Get all the parameters of the WM-110	
	Syntax	G <MAC>/<IP>/<Setup Password>	
	Return	All the parameters of the WM-110	
	Example	Send	G 0.128.200.255.251.242/192.168.1.1/123
		Back	CG for cancel
			AG<All Messages>

Configuration

C. By Direct Broadcast Commands

User Level: For General Users

Admin Level: For Factory Default Setting

– Command List B – User Level –

Command	Description	Notes	
S	Purpose	Set the parameters of WM-110	
	Syntax	S <MAC>/<IP>/<Password>/<Parameter>/<Value>	
	Return	A for accept	
		C for cancel	
	Example	Send	S 0.128.200.255.251.242/192.168.1.1/123/IP/192.168.1.2
		Back	A or C
R	Purpose	Reboot WM-110	
	Syntax	R <MAC>/<IP>/<Setup Password>	
	Return	AR for accept	
		CR for cancel	
	Example	Send	R 0.128.200.255.251.242/192.168.1.1/123
		Back	AR or CR

Configuration

C. By Direct Broadcast Commands

User Level: For General Users

Admin Level: For Factory Default Setting

– Command List C – Admin Level –

Command	Description	Notes	
M	Purpose	Set MAC address of WM-110 then reboot automatically	
	Syntax	M <Old MAC>/<New MAC>/<Factory Password>	
	Return	AM for accept	
		CM for cancel	
	Example	Send	S 0.128.200.255.251.242/0.128.200.255.251.243/123
		Back	'A' or 'C'
I	Purpose	Set IP for Factory settings	
	Syntax	I <MAC>/<New IP>/<Factory Password>	
	Return	AI for accept	
		CI for cancel	
	Example	Send	I 0.128.200.255.251.242/192.168.1.1/123'
		Back	AR or CR

Application Notes

A. Description:

Firewall will make the program off normal, so one might choose the following solutions to Firewall program, “Disable” or “Exception”.

B. Disable Firewall of Windows XP SP2.

Step 1: Execute "Windows Firewall"

Execute “Windows Firewall” in Control Panel.

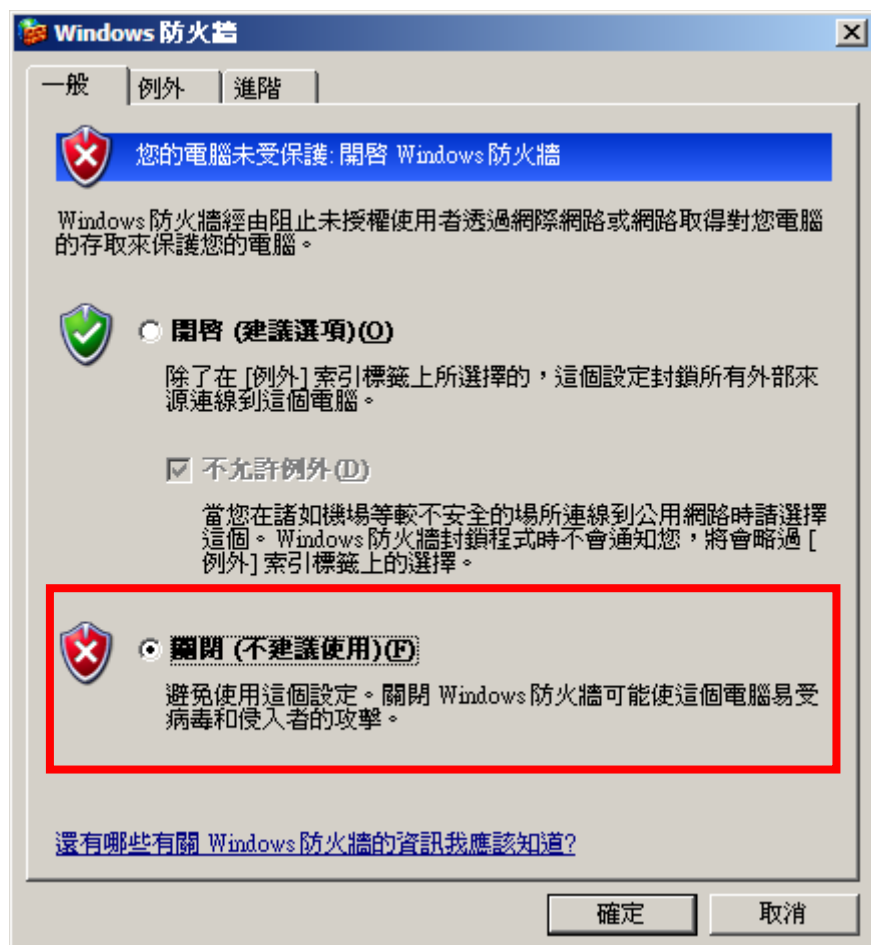


Application Notes

B. Disable Firewall of Windows XP SP2.

Step 2: Close the Firewall

Choose “Close” to close firewall.

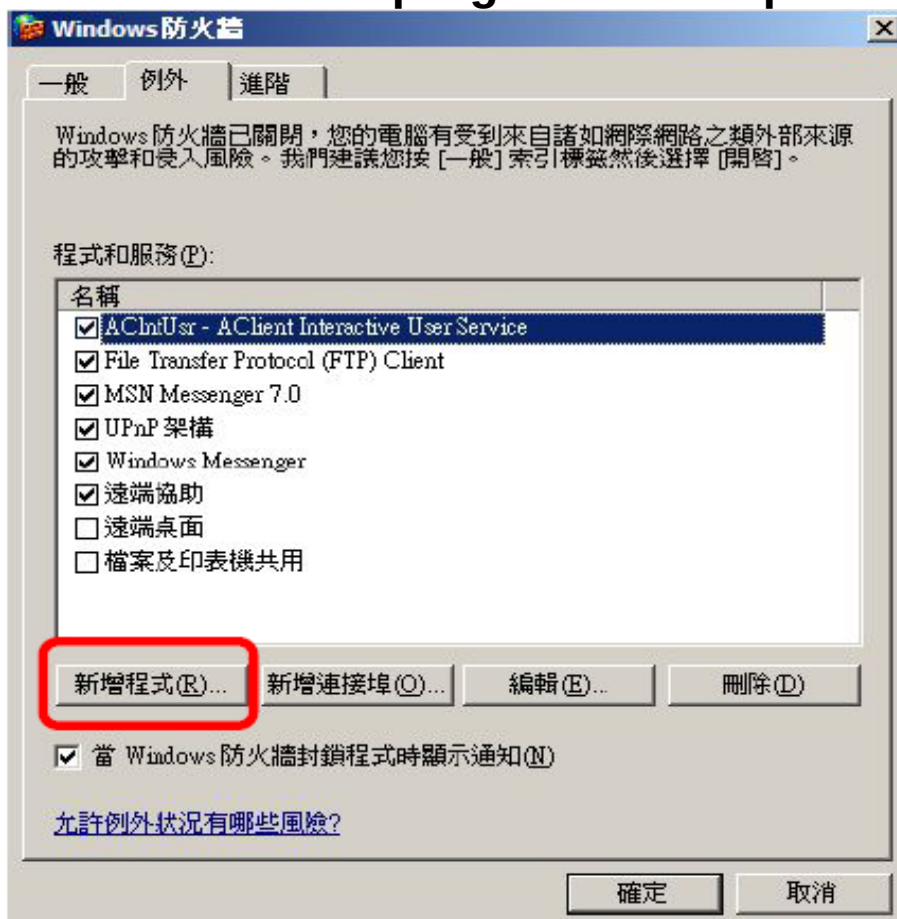


Application Notes

C. Make Program exception for Firewall

Step 1: Choose "Exception"

Choose "Exception" in Firewall Program.
And add on new program of Setup Tools.



Application Notes

C. Make Program exception for Firewall

Step 2: Add on New Program and Selection
Choose “Setup Tools” to make it as an exception.

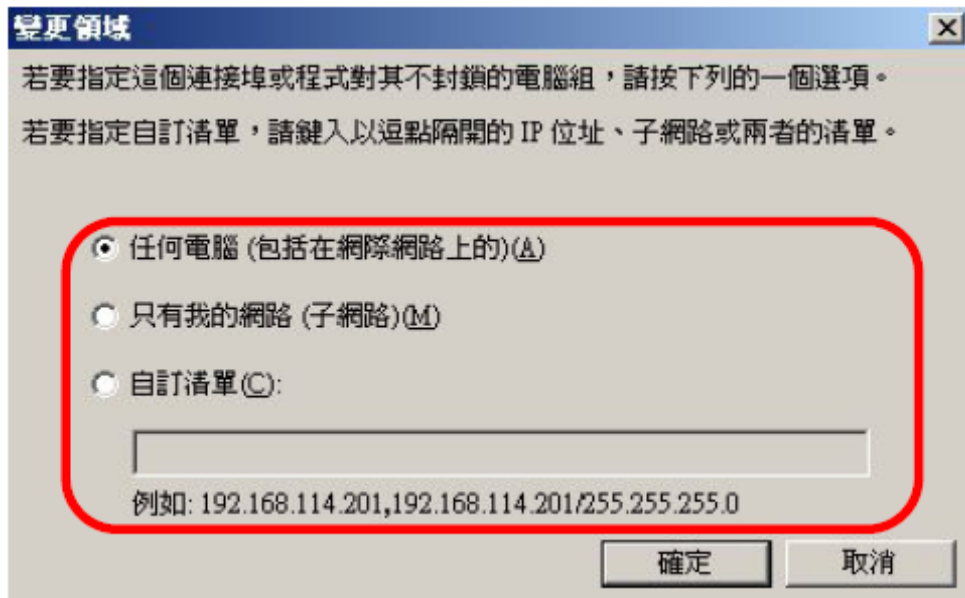


Application Notes

C. Make Program exception for Firewall

Step 3: Allow "Accept Any Computer"

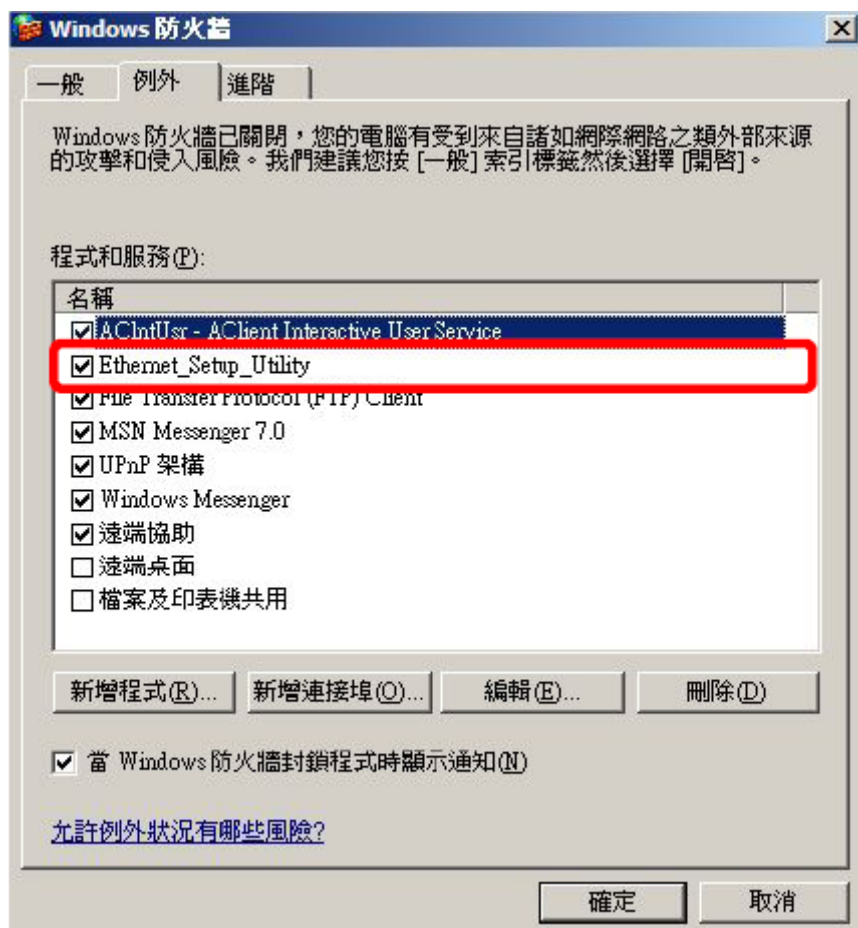
Allow "Accept Any Computer" to finish exception.



Application Notes

C. Make Program exception for Firewall

Step 4: Finished Finish Exception.



Parameter Description

Parameter	Description
Local IP	The IP address of the WS-100 converter on the TCP/IP network. The default Local IP address is 192.168.1.250. This address should be unique. Ask your network administrator for assistance, if in doubt.
Subnet Mask	Identifying the network class which the WS-100 converter belongs to. The default Subnet mask is: 255.255.255.0 for Class C IP. Ask your network administrator for assistance, if in doubt.
Gateway IP	The IP address of the router. The default Gateway IP address is: 192.168.1.254, Ask your network administrator for assistance, if in doubt.
DHCP Client	If this option is enabled, that means the IP address, Subnet mask and Gateway IP address of the WS-100 converter are set dynamically by the DHCP Server. If the setting cannot be got from the DHCP server successfully, the WS-100 converter will use the last setup parameters for its configuration. The possible reason of this case is that the DHCP server is shutdown or not available. Ask your network administrator for assistance, if in doubt.

Parameter Description

Parameter	Description
SIO Port, Type	➤ The local port number of the WS-100 converter to be contacted by other devices. The default value is 9925. And users need to choose one communication mode for the WS-100 converter. There are four different communication modes can be selected. They are TCP Server, TCP Client, UDP Server and UDP Client. ➤ TCP Server – The WS-100 converter will operate at the Passive or the TCP listen mode to receive TCP connection requests from the remote client device. ➤ TCP Client – The WS-100 converter will operate at the Active or the TCP Active mode to request establishing a TCP connection with the remote server device.
Socket port of serial I/O, Type	➤ UDP Server – The WS-100 converter will operate at the UDP Server mode to send and receive UDP datagram to/from the remote device. ➤ UDP Client – The WS-100 converter will operate at the UDP Client mode to send and receive UDP datagram to/from the remote device specified in Remote Host IP address and Remote Host Port. ➤ NOTE: SIO port number 502 is reserved for the Modbus/TCP protocol. When user connects the serial Modbus device running in Modbus/RTU Slave mode, the WS-100 converter can receive connection requests from Modbus/TCP Master device. Also when user connects the serial Modbus device running in Modbus/RTU Master mode, the WS-100 converter can connect to Modbus/TCP Slave device.

Parameter Description

Parameter	Description
DIO Port, Type	Reserved
SIO Baud Rate	The serial parameter settings: ➤ Baud Rate: 300 bps to 115200 ➤ Parity: None, Even, or odd ➤ Data Bits: 7, or 8 ➤ Stop Bit: 1, or 2
Socket I/O settings(baud rate, parity, data bits, stop bits)	
SIO Type	The serial interface types: ➤ RS232 ➤ RS232 with RTS/CTS control ➤ RS232 with RTS/CTS/DSR/DTR control ➤ RS485 half duplex mode ➤ RS422 full duplex mode
Type of serial I/O	
SIO Packets Gap	In some cases, for example, if the Modbus/RTU serial protocol is used, the completion of the message packet in the input buffer is determined by a character-to-character timeout. The SIO Packets Gap of WS-100 defines this timeout period.
SIO Inter-Character Gap	

Parameter Description

Parameter	Description
Remote Host IP	If the WS-100 converter is used in TCP client mode or UDP client mode, the Remote Host IP address must be specified to establish the connection with the designated HOST (server) only.
Remote Host Port	If the WS-100 converter is used in TCP client mode or UDP client mode, the Host Port No. must be specified. This is the port which the Remote Host IP listens for incoming data.
Slave Response Time Out	Expected Time Out for the response of slave machines
Device ID	Just Device ID for WS-100 devices

Parameter Description

Parameter	Description
TCP Link Time Out	When this option is enabled, the TCP communication will be disconnected by the WS-100 converter if there is no further TCP activity within the given timeout value.
Command Port	The WS-100 converter supports the command mode, which user can use to setup the parameters or get the information of the converter with UDP protocol from the remote host. The default Command Port number is 65535. The command port of the WS-100 converter should be set correctly while using the command mode. Please refer to appendix 1 for further

Parameter Description

Parameter	Description
Setup password	This password protects the Setup window of the WS-100 converter from unauthorized entry. To erase an existing password, just leave the Setup password text box blank.
Access password	If this password is configured, the remote host needs to send this access password one second periodically to the Check Status Port of the WS-100 converter, otherwise the data transfer request will not be accepted by the WS-100 converter. To erase an existing password, just leave the Access password text box blank.
Multi Sockets Arbitration Time Period	Arbitration Time period between multi sockets. Default is 0ms for single socket. And 20 ms is suggested when using multi sockets.

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